

Amendments to the Claims

Please add claims 53 and 54 as follows:

1-27 (Cancelled)

28. (Previously Presented) A telecommunications network, comprising:
- at least two network devices, each of said network devices comprising at least one network port;
 - at least one communications path interconnecting the network ports of each of said at least two network devices, each combination of communications path and interconnected network ports forming a network link; and
 - at least one controller in communication with said at least two network devices, said at least one controller configured to perform the steps of:
 - detecting a network modification within said telecommunications network;
 - causing at least one of said network devices to transmit a first port identification message to a successive network device in said communications path, said port identification message including information regarding at least said at least one network device's perception of the successive network device's network links;
 - receiving a second port identification message from said successive network device, said second port identification message including information regarding at least said successive network device's perception of its own network links;
 - comparing said at least one network device's perception of the network links with said successive network device's perception of its network links; and
 - updating, if said at least one network device's perception of the network links does not agree with said successive network device's perception of its network links, said at least one network device's perception of the network links to agree with said successive network device's perception of its network links.

29. (Previously Presented) The telecommunications network of claim 28, wherein said at least two network devices comprise network ports.

30. (Previously Presented) The telecommunications network of claim 29, further comprising at least one network element comprising respective ones of said network ports and said network ports are Synchronous Optical Networking (SONET) ports.

31. (Previously Presented) The telecommunications network of claim 29, further comprising at least one network element comprising respective ones of said network ports and said network ports are Synchronous Digital Hierarchy (SDH) ports.

32. (Previously Presented) The telecommunications network of claim 28, wherein said communications path is an optical communications path.

33. (Previously Presented) The telecommunications network of claim 28, wherein said at least one controller is incorporated within said at least one network device.

34. (Previously Presented) The telecommunications network of claim 28, wherein at least one controller is incorporated within each of said at least two network devices.

35. (Previously Presented) The telecommunications network of claim 28, wherein said at least one network device and said successive network device are neighboring devices.

36. (Previously Presented) The telecommunications network of claim 35, wherein said at least one network device's perception of the network link comprises a device identity of said at least one network device and said successive network device.

37. (Previously Presented) The telecommunications network of claim 35, wherein said successive network device's perception of the network link comprises a device identity of said successive network device.

38. (Previously Presented) The telecommunications network of claim 28, wherein said at least one network device is located substantially at a beginning of said communications path and said successive network device is located substantially at an end of said communications path.

39. (Previously Presented) The telecommunications network of claim 38, wherein said at least one network device's perception of the network link comprises a device identity of said at least one network device, said successive network device and any intermediate devices.

40. (Previously Presented) The telecommunications network of claim 38, wherein said successive network device's perception of the network link comprises a device identity of said successive network device and any intermediate devices between said at least one network device and said successive network device.

41. (Previously Presented) The telecommunications network of claim 28, wherein said network modification comprises an addition of a network device to said telecommunications network.

42. (Previously Presented) The telecommunications network of claim 28, wherein said network modification comprises a reconfiguration of a network link.

43. (Previously Presented) The telecommunications network of claim 28, wherein said at least one controller is configured to:

cause each of said at least two network devices to transmit a port identification message to a successive device in said communications path, said port identification message including information regarding each of said at least two network device's perception of the network link.

44. (Previously Presented) The telecommunications network of claim 43, wherein said at least one controller is further configured to develop a network map by accumulating the network link perceptions of each of said at least two network devices.

45. (Previously Presented) The telecommunications network of claim 44, further comprising a provisioning system configured to allocate telecommunications bandwidth in accordance with said network mapping.

46. (Previously Presented) The telecommunications network of claim 44 further comprising an alarm processing system responsive to network alarms by re-routing communications through the network, said alarm processing system also responsive to the network link perceptions of each of said at least two network devices.

47. (Previously Presented) The telecommunications network of claim 28, wherein said telecommunications network is a bi-directional line switched ring and each of said at least two network devices is configured to transmit port identification messages to network devices before and after each of said at least two network devices along said communications path.

48. (Previously Presented) A method for automatic link identification in a telecommunications network comprising at least two network devices, each of said network devices comprising at least one network port, wherein said network ports are interconnected via at least one and a communications path, each combination of communications path and connected network ports forming a network link, comprising;

detecting a network modification within said telecommunications network;

transmitting a first port identification message from at least one of said network devices to a successive network device in said communications path, said port identification message including information regarding at least said at least one network device's perception of the successive network device's network links link;

receiving a second port identification message from said successive network device, said second port identification message including information regarding at least said successive network device's perception of its own the network links link;

comparing said at least one network device's perception of the network links link with said successive network device's perception of its the network links link; and

updating, if said at least one network device's perception of the network links link does not agree with said successive network device's perception of its the network links link, said at least one network device's perception of the network links link to agree with said successive network device's perception of its the network links link.

49. (Previously Presented) The method of claim 48, wherein each of said at least two network devices is configured to transmit to a successive device in said communications path, a port identification message including information

regarding each of said at least two network device's perception of the network link.

50. (Previously Presented) The method of claim 48, wherein said steps of transmitting and receiving form a logical data link connection between said at least one network device and said successive network device.

51. (Previously Presented) The method of claim 48, wherein Link Access Protocol-Digital (LAPD) protocol is used for the transmitting of said first and second port identification messages.

52. (Previously Presented) The method of claim 48, wherein said telecommunications network is a bi-directional line switched ring and each of said at least two network devices is configured to transmit port identification messages to network devices before and after each of said at least two network devices along said communications path.

53. (New) The telecommunications network of claim 28, wherein said at least one controller is further configured to perform the steps of:

after updating said at least one network device's perception of the network links, repeating the transmitting, receiving, comparing and updating steps until said at least one network device's perception of the network links agree with said successive network device's perception of its network links.

54. (New) The telecommunications network of claim 28, wherein said network links perceived by said at least one network device and said successive network device are network links interconnecting the network ports of said at least one network device and said successive network device.